

A Technical Workshop on the Public Release of CalLite-Central Valley Water Management Screening Model

AGENDA

CalFed Bay-Delta Room
July 7th, 2008
1:00 PM to 4:30 PM

Part I -- Model Demo and Release (1hr)

- Introductory Remarks (F. Chung)
- Overview of the Model (S. Arora)
- Model Demo and Release (N. Islam)

Break 15 minutes

Part II -- Model Users Training (2 hrs)

- Introduction to training exercises (S. Arora)
- Exercise 1: Set-up and run a 2030 Level-of-Development base study
(Scenario1). Retrieve and export model results. (E. Reyes/N. Islam)
- Exercise 2: Set-up and run a Scenario 2 study with Old and Middle Rivers (OMR)
flow criteria added to the base study (Scenario 1). Review Scenario 1 and 2 logs;
compare selected model results. (E. Reyes/N. Islam)
- Exercise 3: Set-up and run a Scenario 3 study with a dual conveyance added to
the base study (Scenario 1). Review Scenarios 1, 2 and 3 logs; compare
selected model results. (E. Reyes/N. Islam)

Overview of CalLite - Central Valley Water Management Screening Model

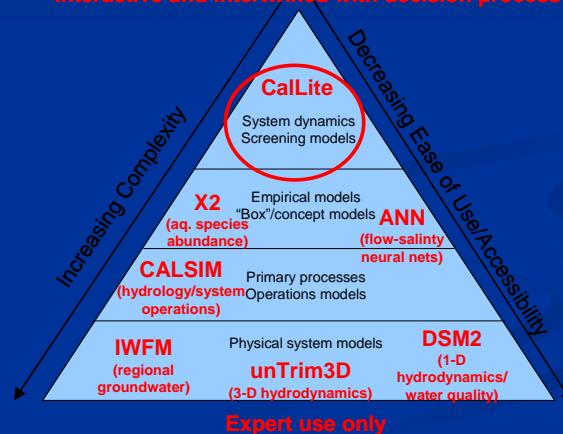
Sushil Arora, Ph.D., P.E.
Bay-Delta Office, DWR

CalLite Workshop
July 7, 2008



What is CalLite Model ?

- Open to use by non-experts
- Allows exploration
- Interactive and intertwined with decision process





What is CalLite Model ?

- A user-friendly, interactive, rapid, easy-to-understand and use model
- Represents a simplified CVP and SWP system while maintaining its core elements including COA
- A Screening tool for “what-if” scenarios for SWP/CVP Planning & Management options
- Accurate within 5 percent of CalSim; run time less than 5 minutes



What is CalLite Model ?

- Maintains hydrologic, operational and institutional integrity as represented in CALSIM
- Simulation Period is 82 years (1921-2003); Simulation Time Step is MONTHLY
- Delta flow-salinity relationship (ANN module) is identical to CALSIM
- Model development is powered by commercial proprietary software, *GoldSim*



CalSim/CalLite Model Features Comparison

■ CalSim

- Dynamic Ground-Stream Water Interaction
- Contractor Level Operations Detail
- CVPIA (b)(2) and EWA Regulatory Operations
- Sac. Basin Dynamically Operated
- 30 minute Run-Time for One step

■ CalLite

- Fixed Ground-Stream Water Interaction
- Lumped Contractor Operations Detail
- Single Regulatory Environment
- Sac Basin pre-Processed
- Less than 5 minute run-time



Key Assumptions for CalSim/CalLite Model Comparison Studies

- Hydrology: 2005 Level-of-Development
- Facilities: Existing
- SWP and CVP Demands at current level
- All current system regulatory requirements including D-1641 in the Delta
- Study Period: 1922 – 2003



Results Comparison

	1922-2003					1929-1934					1987-1992				
	CalLite	CALSIM	Diff	% Diff		CalLite	CALSIM	Diff	% Diff		CalLite	CALSIM	Diff	% Diff	
Trinity R blw Lewiston	692	707	-15	-2%		411	411	0	0%		472	472	0	0%	
Trinity Export	549	539	10	2%		334	356	-22	-6%		427	448	-21	-5%	
Clear Cr blw Whiskeytown	42	45	-3	-6%		33	33	0	0%		38	38	0	0%	
Sacramento R @ Keswick	6296	6285	10	0%		3951	4024	-73	-2%		4598	4639	-41	-1%	
Sacramento R @ Wilkins Slough	6694	6685	10	0%		3974	4032	-58	-1%		4898	4946	-49	-1%	
Feather R blw Thermalito	3167	3187	-20	-1%		1580	1637	-57	-4%		1627	1658	-31	-2%	
American R blw Nimbus	2520	2522	-2	0%		1363	1328	35	3%		1222	1199	23	2%	
Delta Inflow	21969	21959	10	0%		9914	9934	-21	0%		10755	10745	11	0%	
Sacramento R @ Hood	16234	16226	8	0%		8221	8242	-21	0%		9385	9374	11	0%	
Yolo Bypass	1928	1926	2	0%		110	110	0	0%		130	130	0	0%	
Mokelumne R	666	666	0	0%		202	202	0	0%		140	140	0	0%	
San Joaquin R d/s Calaveras	3141	3141	0	0%		1381	1381	0	0%		1100	1100	0	0%	
Delta Outflow	14911	14849	62	0%		5044	5100	-56	-1%		5537	5624	-87	-2%	
Required	5581	5575	6	0%		4090	4082	8	0%		3912	4126	-24	-5%	
Surplus															
Delta Diversions	5977	6038	-61	-1%		3610	3561	49	1%		3886	3765	121	3%	
Banks SWP	3309	3384	-75	-2%		1899	1943	-44	-2%		1947	1959	-12	-1%	
Banks CVP	0	78	-78	-100%		0	18	-18	-100%		0	31	-31	-100%	
Tracy	2668	2576	92	4%		1711	1618	93	6%		1939	1806	133	7%	
SWP SOD Deliveries	3267	3233	34	1%		1867	1847	20	1%		1929	1874	55	3%	
Table A	2729	2726	3	0%		1637	1527	110	7%		1722	1691	31	2%	
Article 21	245	216	29	13%		134	223	-89	-40%		30	5	25	546%	
Article 56	292	290	2	1%		96	97	-1	-1%		177	179	-1	-1%	
CVP SOD Deliveries	2712	2770	-58	-2%		1647	1604	42	3%		1942	1889	52	3%	



CalLite Innovative Features

- Interactive interface to setup model run
 - Interactive controls for input
 - Features for output display
 - Features for scenario manager
- Delta requirement and facility control
 - Delta Cross Channel – No reg., D1641, User defined
 - Min. NDO – No reg., D1641, User defined
 - Old & Middle River flows, X2, Etc.
- Future water management options
 - North of Delta Off stream Storage
 - Shasta Enlargement
 - Isolated Facility
 - Etc.



CalLite Innovative Features

- Demand management options
 - SWP demand – Current, Future, User defined
 - CVP demand – Full Contract, User-defined
- Climate change and hydrologic uncertainty
 - Different emission and model scenarios
 - Sea level rise options
 - Monte-Carlo re-sampling of observed hydrology
 - Paleoclimate mapping of hydrology
- Forecast-based delivery allocation decision-making



CalLite Model Limitations

- Monthly time step
- Simplified Sacramento Valley representation
- San Joaquin Valley currently not modeled
- Calif. Aqueduct and DMC not modeled
- D1641 regulatory requirements only
- CVP Cross Valley Canal currently not modeled
- Recommended for use in “with” and ”without” project scenarios



Future Work

- Incorporate Climate Change Scenarios including Sea Level Rise
- Apply model to Agency Planning Programs as requested by program managers
- Prepare model developer documentation
- Incorporate San Joaquin River system in coordination with Reclamation

Model Users Training

Erik Reyes, P.E.
Bay-Delta Office, DWR



Callite Workshop
July 7, 2008



Running a Base Study

- Base Study Assumptions (Scenario 1)
 - 82 year simulation period (WY1922 – 2003)
 - 2030 Level of Development
 - SWP SOD Demands: Full Table A
 - CVP SOD Demands: Full Contract
 - Facilities: No new facilities
 - Regulations: D-1641



Running a Base Study

1. What is the Long-Term (1922 – 2003) Average Annual SWP South of Delta Delivery?
2. What is the lowest storage level that is reached in Shasta Lake?
3. How much Annual CVP Delivery can be expected at 75%, 50%, 25% Exceedence Levels?

Answers: 1) 3027.5 TAF 2) 550 TAF 3) 2301.1 TAF, 2825.2 TAF, 3106.3 TAF



Running an Old and Middle River (OMR) Scenario

- OMR Assumptions (Scenario 2)
 - OMR Flow requirement Jan – Jun: -3000 cfs
 - No OMR Flow requirement Jul – Dec



Running an Old and Middle River (OMR) Scenario

1. Which Alternative has more positive OMR Flow; Scenario 1 or 2?
2. What are the average Delta Exports for each scenario?
3. What is the impact on Qwest due to the OMR Flow requirements?

Answers: 1) Scenario 2 2) 5961.3 TAF (Scen1) and 5267.8 TAF (Scen 2) 3) more positive also



Running an Isolated Facility (IF) Scenario

- IF Assumptions (Scenario 3)
 - IF Physical Capacity: 10,000 cfs
 - IF Monthly Operational Capacity: 10,000 cfs
 - No Hood Bypass Requirement
 - Minimum Through Delta Export before IF: 3,000 cfs
 - Maximum Through Delta Export: 5,000 cfs



Running an Isolated Facility (IF) Scenario

1. What are the average annual Delta exports, during the '29 – '34 drought, of each of the three scenarios?
2. Rank the Scenarios from best to worst according to Banks EC and Jones EC.
3. Rank the Scenarios from best to worst according to OMR Flow (more positive is better)?

Answers: 1) 3253.6 TAF (Scen1), 3014.2 TAF (Scen2)
3401.4 TAF (Scen3) 2) Scen3, Scen1, Scen2 3)
Scen3, Scen2, Scen1

Running a Base Study (Scenario 1)

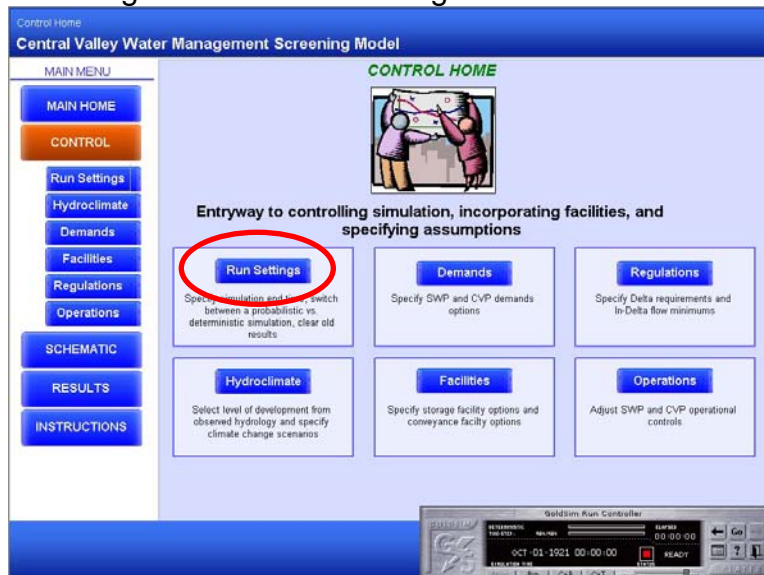
1. Select the Reset button on the Run Controller



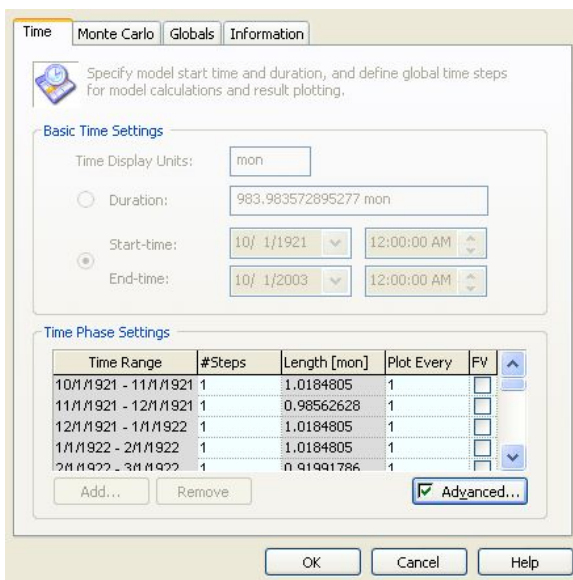
2. Navigate to the Control dashboard



3. Navigate to the Run Settings dashboard



4. Select the Simulation Period & Save Results as Scenario No. 1



5. Choose a Hydro-Climate condition

- Level of Development
- Climate Option

Hydroclimate
Central Valley Water Management Screening Model

MAIN MENU

MAIN HOME
CONTROL
Run Settings
Hydroclimate
Demands
Facilities
Regulations
Operations
SCHEMATIC
RESULTS
INSTRUCTIONS

OBSERVED HYDROLOGY

Level of Development

2005 ☐
2030 ☒

CLIMATE CHANGE SCENARIOS

Air temperature
Precipitation timing, form, and quantity
Sea level rise
River flow

Emission Scenario AOGCM Model Select Climate Option

Direct observed hydrology	<input checked="" type="checkbox"/>
A2	GFDL
A2	PCM
B1	GFDL
B1	PCM

...OR...
All (as Realizations) ☐
Set "Probabilistic" in Run Settings if using this option

Realization #1: Direct Obs
Realization #2: GFDL A2
Realization #3: PCM A2
Realization #4: GFDL B1
Realization #5: PCM B1

IPCC AR4 Info

GoldSim Run Controller
OCT-01-1921 00:00:00
READY

6. Select South of Delta Demand Levels for SWP and CVP

Demands
Central Valley Water Management Screening Model

MAIN MENU

MAIN HOME
CONTROL
Run Settings
Hydroclimate
Demands
Facilities
Regulations
Operations
SCHEMATIC
RESULTS
INSTRUCTIONS

SWP DEMANDS

Pre-Defined Demand Sets

Current (2005) Variable 3.3 - 4.2 MAFY ☐
Future (Full Table A) 4.2 MAFY ☒

User-Defined Demand Set

User-Defined (see below)

MWDSC	Other MI	AG
2011	1067	1047

Notes:

- Full Table A MWDSC=2011, OM M&I=1067, AG=1047
- Values not permitted to exceed Table A values
- Does not include Article 56 or 21 demands
- Losses fixed
- All values in TAF/YR

CVP DEMANDS

Pre-Defined Demand Set

Full Contract ☒
User-Defined (see below)

User-Defined Demand Set

AG	MI	Refuge
1852	164	289

Notes:

- Full Contract AG=1852, MI=164, RF=289
- Values not permitted to exceed contract demands
- Water Rights, Exchange, and Losses are fixed
- All values in TAF/YR

GoldSim Run Controller
OCT-01-1921 00:00:00
READY

7. Ensure that no Facilities are activated



8. Ensure that only D1641 Regulations are activated



9. Select the Run Button on the Run Controller



Running an OMR (Old and Middle River) Study (Scenario 2)

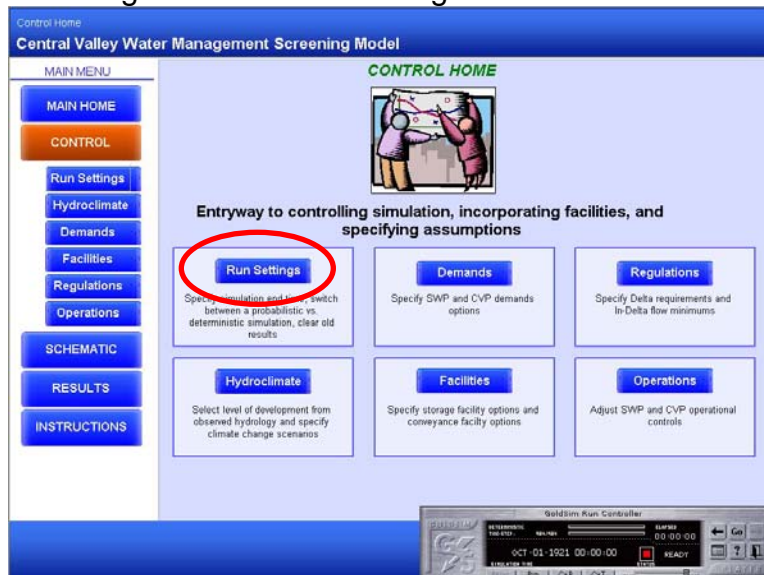
1. Select the Reset button on the Run Controller



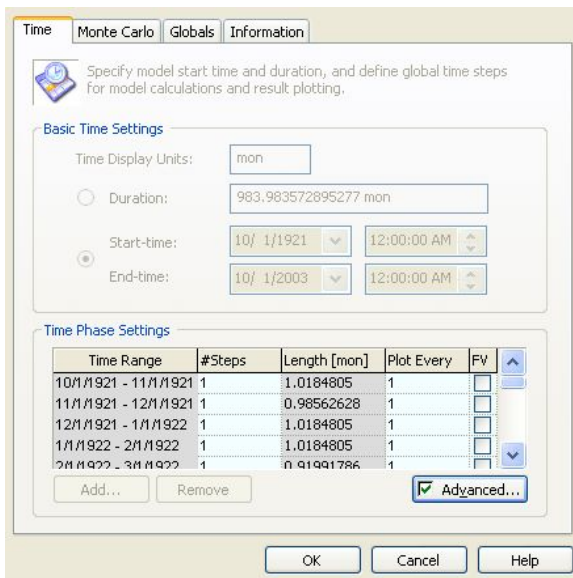
2. Navigate to the Control dashboard



3. Navigate to the Run Settings dashboard

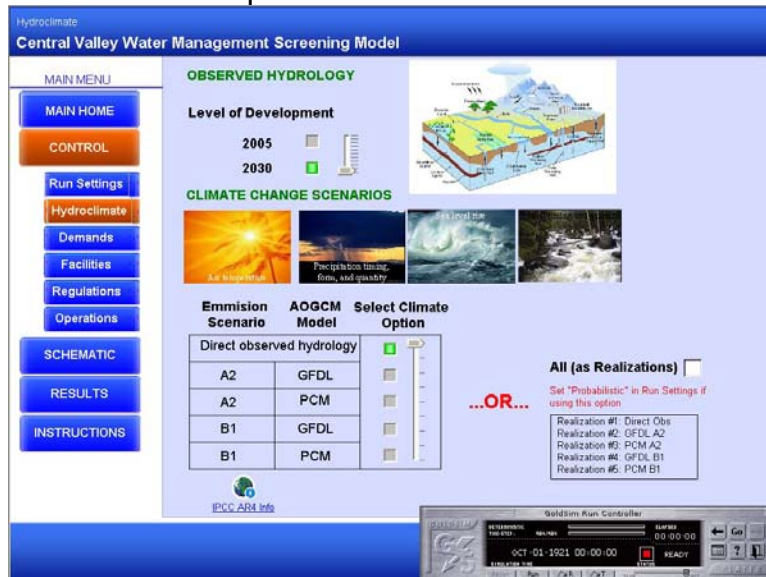


4. Select the Simulation Period & Save Results as Scenario No. 2

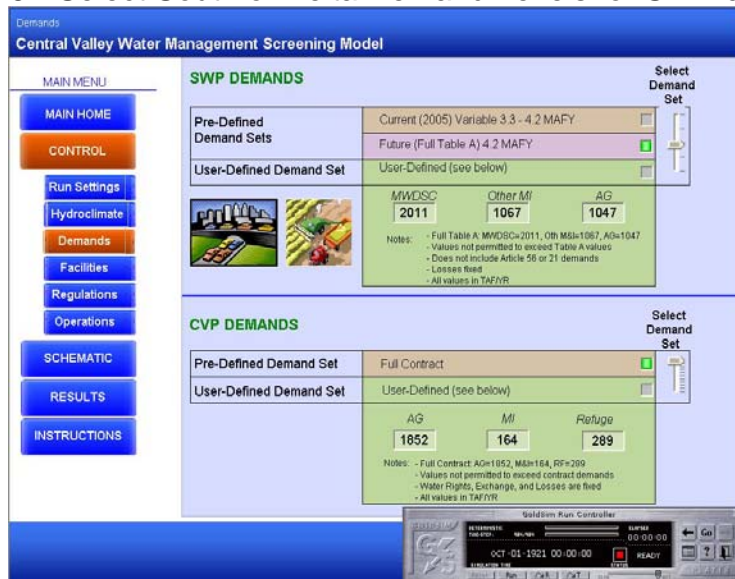


5. Choose a Hydro-Climate condition

- Level of Development
- Climate Option



6. Select South of Delta Demand Levels for SWP and CVP



7. Ensure that no Facilities are activated

Facility Options

Central Valley Water Management Screening Model

MAIN MENU

- MAIN HOME
- CONTROL
- Run Settings
- Hydroclimate
- Demands
- Facilities
- Regulations
- Operations
- SCHEMATIC
- RESULTS
- INSTRUCTIONS

STORAGE FACILITY OPTIONS	ON/OFF	ASSUMPTIONS
North of Delta Offstream Storage	<input type="checkbox"/>	Assumptions
Shasta Enlargement	<input type="checkbox"/>	Assumptions
Los Vaqueros Enlargement	<input type="checkbox"/>	Assumptions
Temperance Flat	<input type="checkbox"/>	Assumptions
Sacramento Valley Conjunctive Use	<input type="checkbox"/>	Assumptions

CONVEYANCE FACILITY OPTIONS	ON/OFF	ASSUMPTIONS
Isolated Facility	<input type="checkbox"/>	Assumptions
Banks Pumping Plant	<input type="checkbox"/>	Assumptions

HABITAT RESTORATION OPTIONS	ON/OFF	ASSUMPTIONS
Fremont Weir Diversion	<input type="checkbox"/>	Assumptions

GoldSim Run Controller

OCT-01-1921 00:00:00

READY

8. Select the OMR Regulation Option and Click on Specifications

Sacramento Valley and Delta Environmental Requirements

Central Valley Water Management Screening Model

MAIN MENU

- MAIN HOME
- CONTROL
- Run Settings
- Hydroclimate
- Demands
- Facilities
- Regulations
- Operations
- SCHEMATIC
- RESULTS
- INSTRUCTIONS

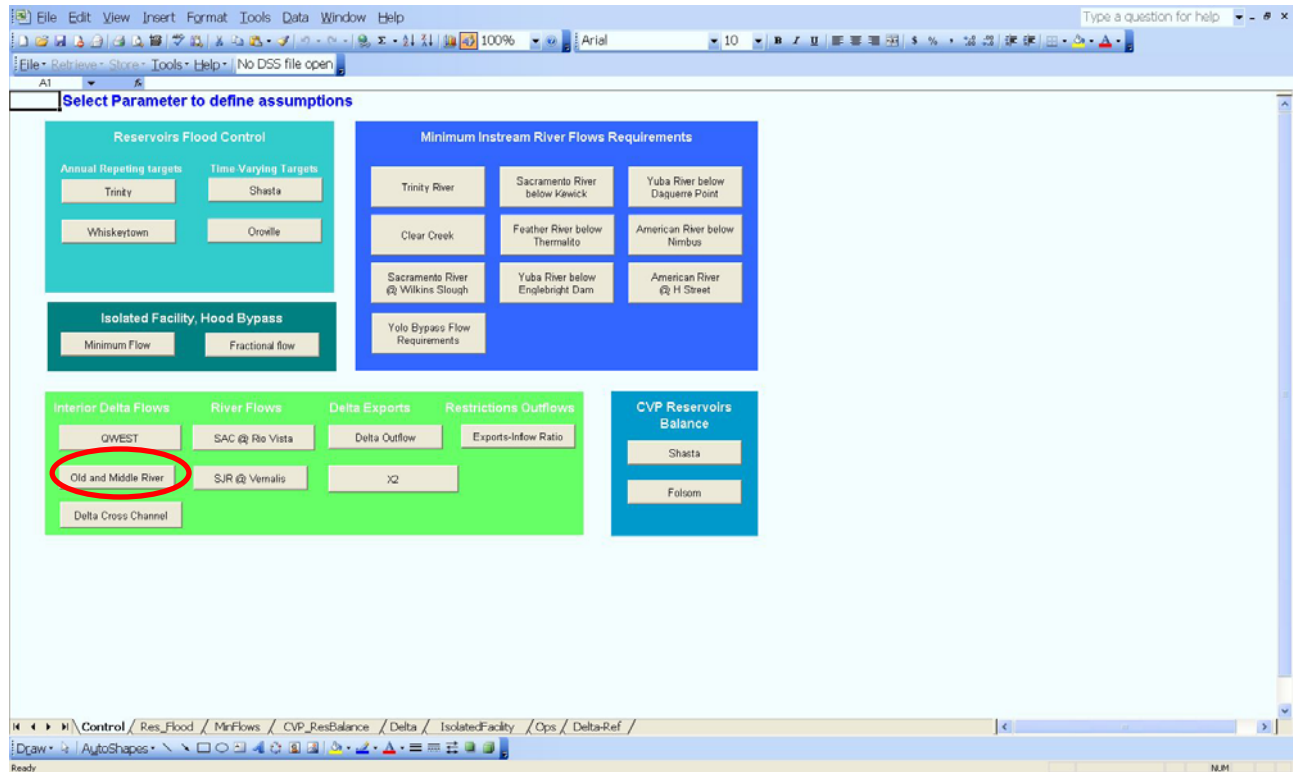
PARAMETER	ON/OFF	If ON, select criteria:	
		Per D1641	User-defined
Interior Delta Flows			
QWEST (San Joaquin River near Jersey Point)	<input checked="" type="checkbox"/>		Specifications
Old and Middle River (OMR)	<input checked="" type="checkbox"/>		Specifications
Delta Cross Channel	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Specifications
River flows			
Sacramento River at Rio Vista Minimum Flow	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Specifications
San Joaquin River at Vernalis	<input type="checkbox"/>	<input type="checkbox"/>	Specifications
Delta Outflows			
Minimum Net Delta Outflow	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Specifications
X2 Requirements	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Specifications
Exports restrictions			
Export-Inflow Ratio	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	Specifications
VAMP (Vernalis Adaptive Management Program)	<input checked="" type="checkbox"/>		
Export-San Joaquin River Inflow Ratio	<input type="checkbox"/>		Specifications
Salinity			
Agricultural standards		Emmaton	<input checked="" type="checkbox"/>
		Jersey Point	<input checked="" type="checkbox"/>
Municipal & Industrial standards		Rock Slough	<input checked="" type="checkbox"/>
Fish & Wildlife standards		Collinsville	<input checked="" type="checkbox"/>

GoldSim Run Controller

OCT-01-1921 00:00:00

READY

8a. Select the Old and Middle River Button



8b. Enter desired values for OMR Flow Criteria for Month and Water Year Type and then hit Save & Exit

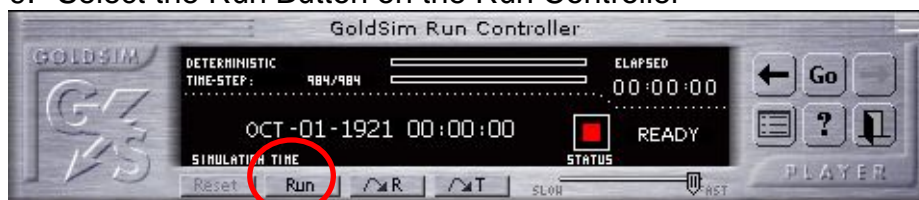
OMR = Combined Old and Middle River minimum flows

Month	W	AN	BN	D	C
Jan	-5000	-5000	-5000	-5000	-5000
Feb	-5000	-5000	-5000	-5000	-5000
Mar	-5000	-5000	-5000	-5000	-5000
Apr	-5000	-5000	-5000	-5000	-5000
May	-5000	-5000	-5000	-5000	-5000
Jun	-5000	-5000	-5000	-5000	-5000
Jul	-99999	-99999	-99999	-99999	-99999
Aug	-99999	-99999	-99999	-99999	-99999
Sep	-99999	-99999	-99999	-99999	-99999
Oct	-99999	-99999	-99999	-99999	-99999
Nov	-99999	-99999	-99999	-99999	-99999
Dec	-99999	-99999	-99999	-99999	-99999

Return to Control

Save & Exit (circled in red)

9. Select the Run Button on the Run Controller



Running an Isolated Facility Study (Scenario 3)

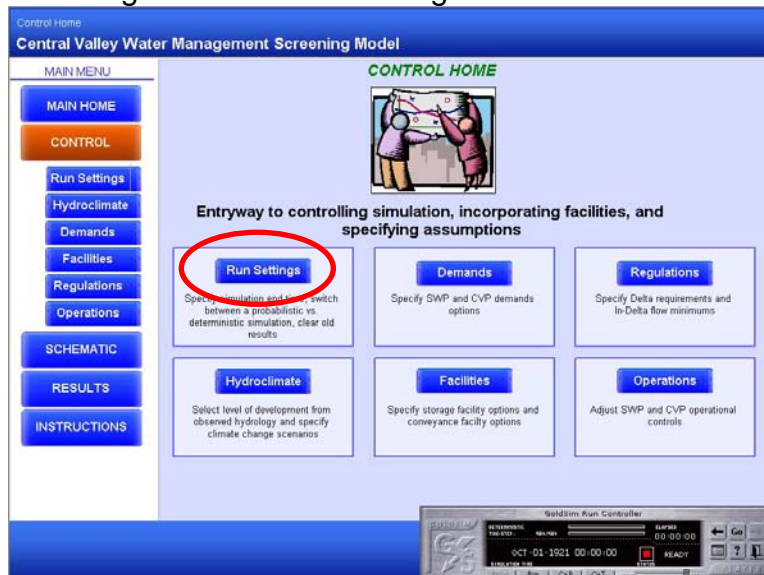
1. Select the Reset button on the Run Controller



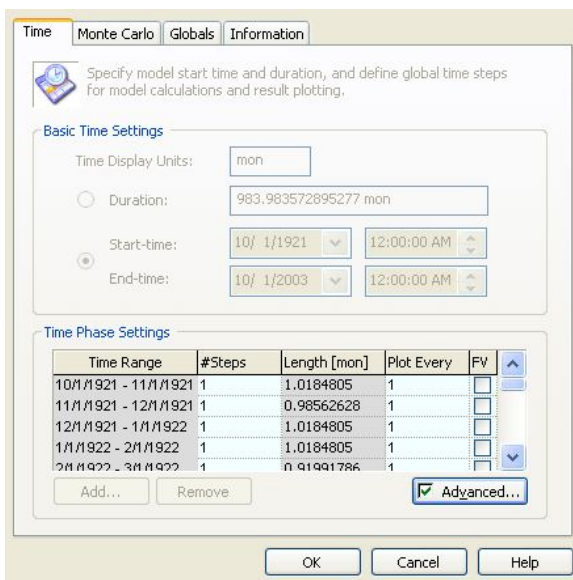
2. Navigate to the Control dashboard



3. Navigate to the Run Settings dashboard

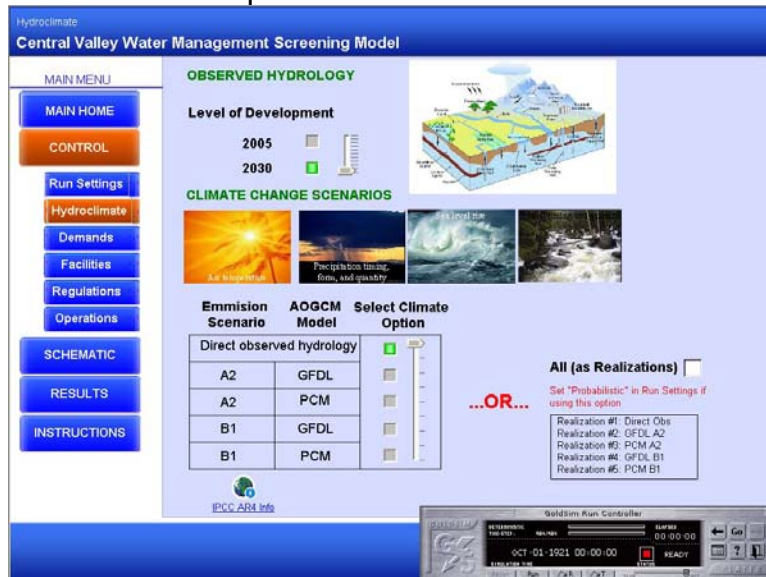


4. Select the Simulation Period & Save Results as Scenario No. 3

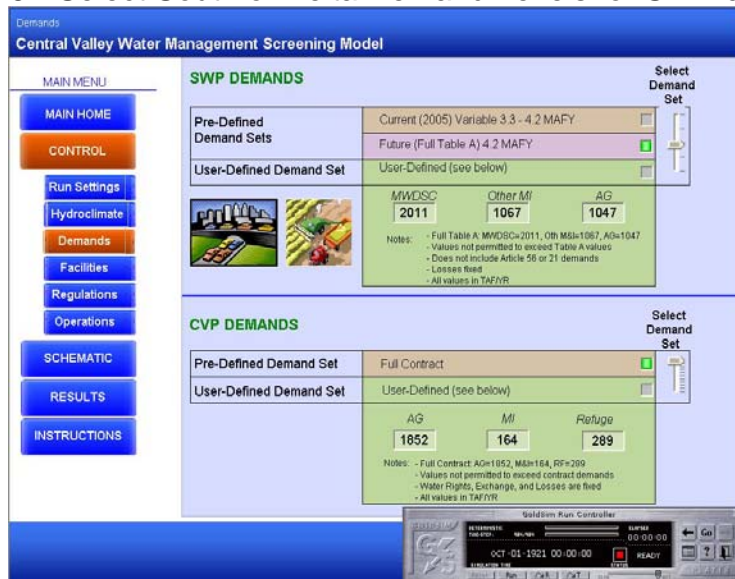


5. Choose a Hydro-Climate condition

- Level of Development
- Climate Option



6. Select South of Delta Demand Levels for SWP and CVP

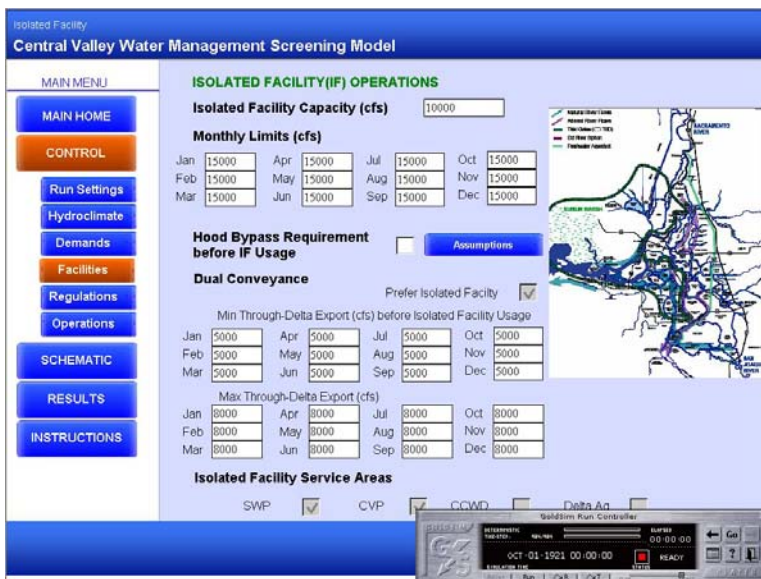


7. Select the Isolated Facility option and Click on the Assumption button

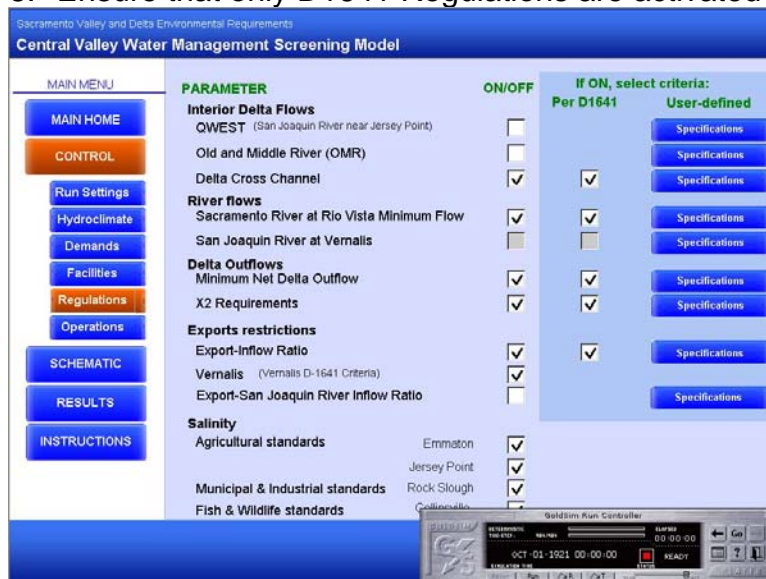


7a. Select the following Isolated Facility Options

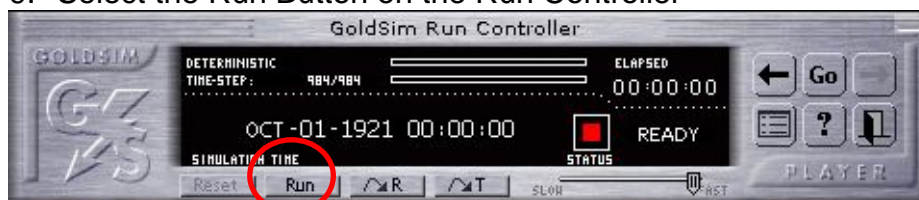
- IF Physical Capacity
- IF Monthly Limits
- Hood Bypass Requirement
- Minimum Through-Delta Export before IF Usage
- Maximum Through-Delta Export



8. Ensure that only D1641 Regulations are activated

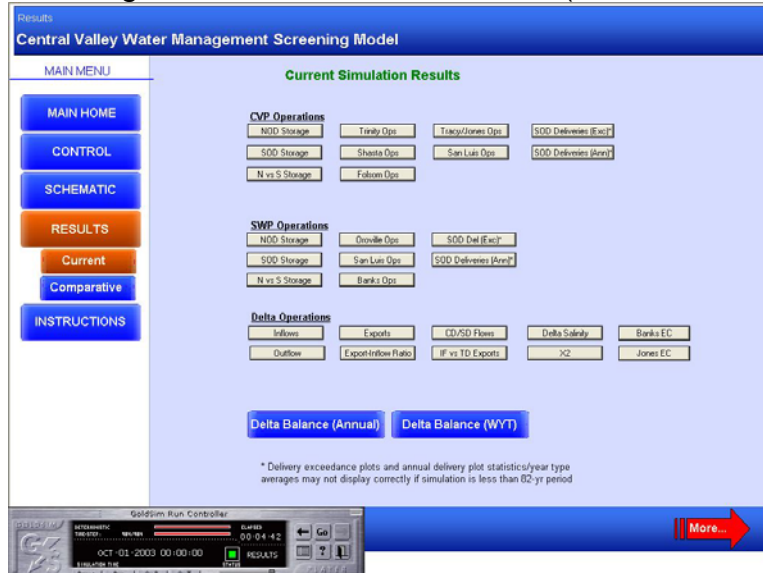


9. Select the Run Button on the Run Controller

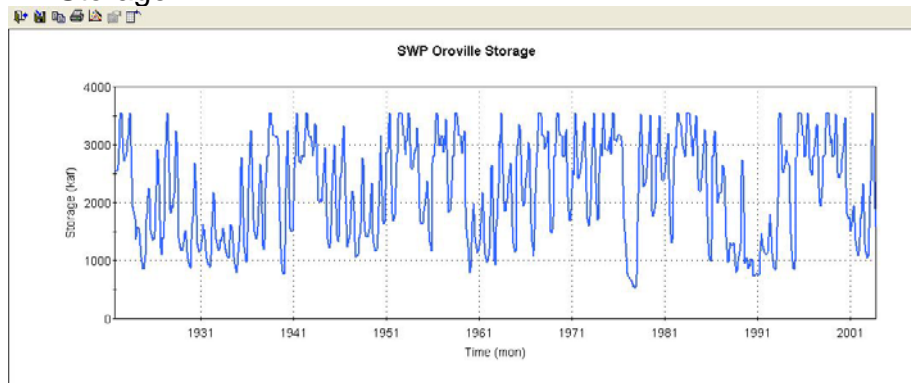


Retrieving and Exporting Results

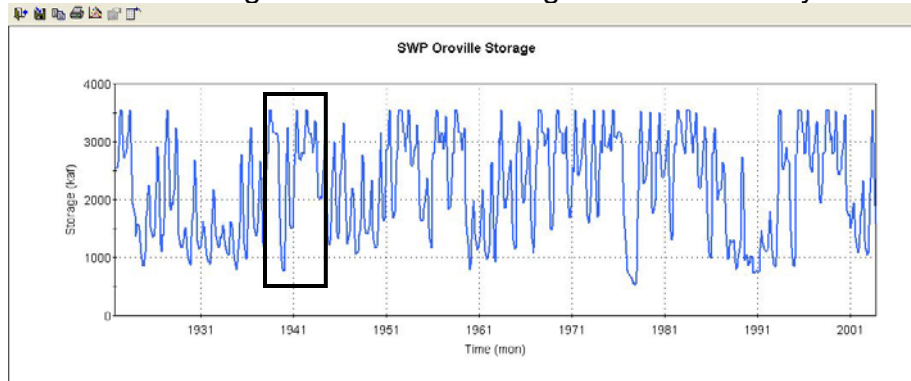
1. Navigate to the Results Dashboard (defaults to Current Simulation results)



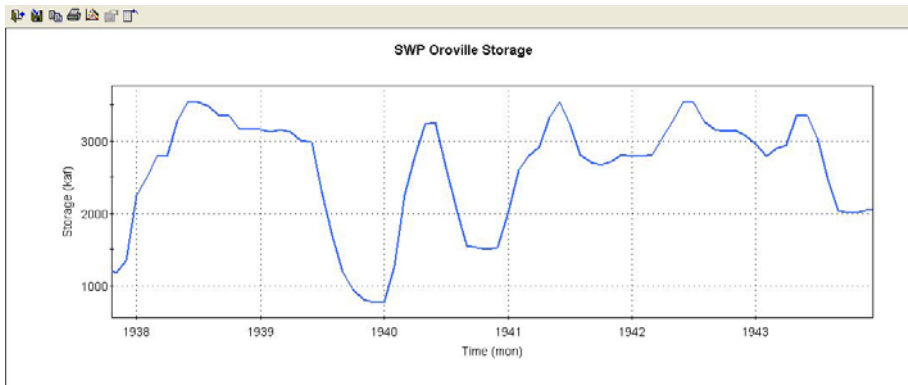
2. Click on one of the grey buttons for a chart of given results. For Example NOD Storage.



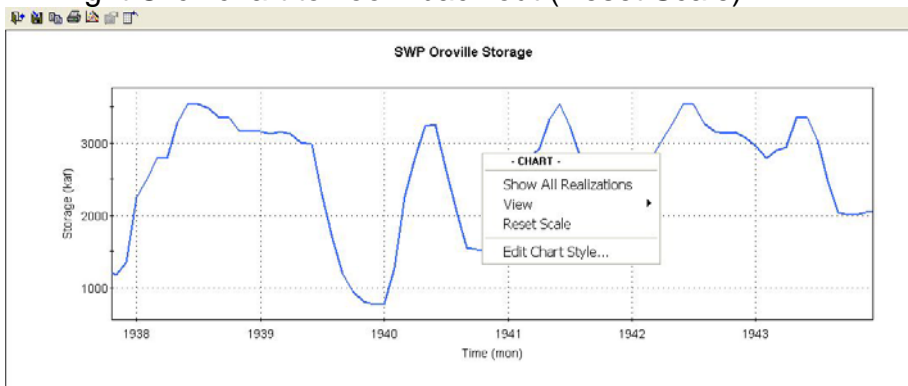
3. Click and drag mouse while holding down the Ctrl key to zoom.



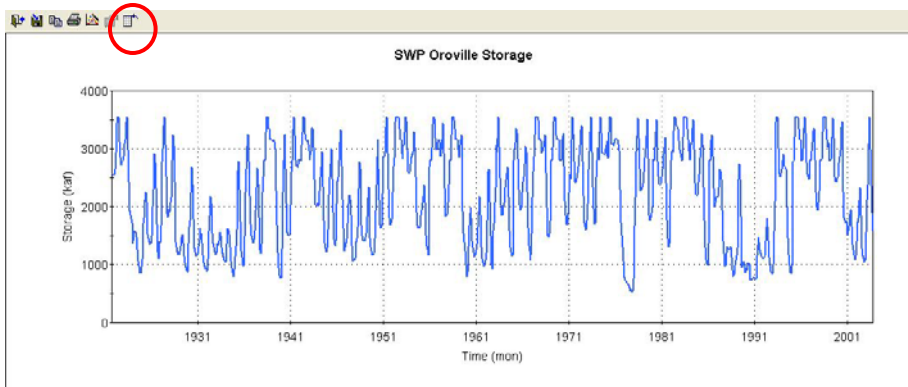
Results in:



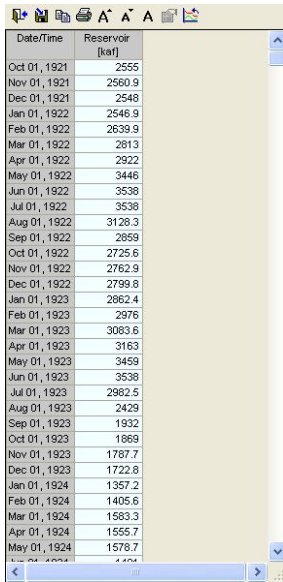
4. Right Click chart to zoom back out (Reset Scale)



5. Click on Table Icon to view data in Tabular form

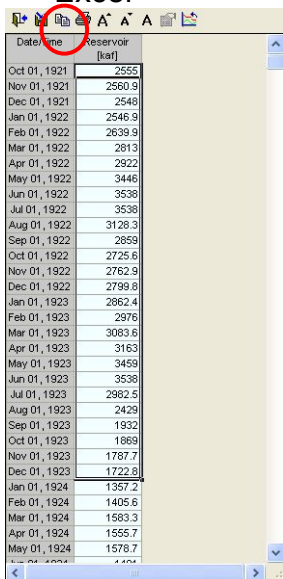


Results in:



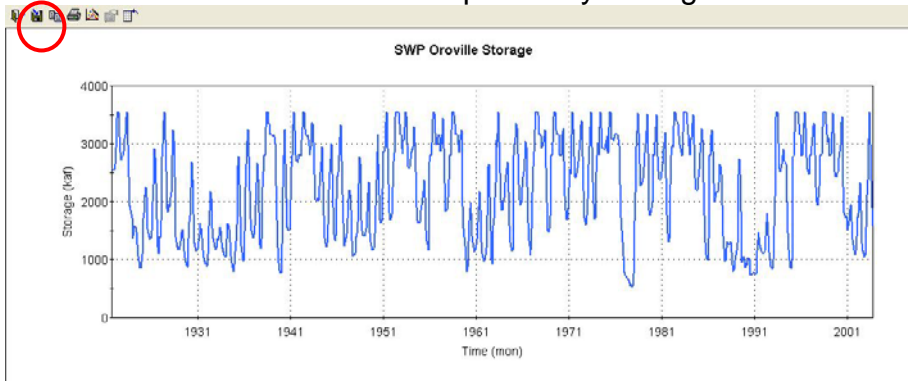
Date/Time	Reservoir [kaf]
Oct 01, 1921	2555
Nov 01, 1921	2560.9
Dec 01, 1921	2548
Jan 01, 1922	2546.9
Feb 01, 1922	2639.9
Mar 01, 1922	2813
Apr 01, 1922	2922
May 01, 1922	3446
Jun 01, 1922	3538
Jul 01, 1922	3538
Aug 01, 1922	3128.3
Sep 01, 1922	2859
Oct 01, 1922	2725.6
Nov 01, 1922	2762.9
Dec 01, 1922	2799.8
Jan 01, 1923	2862.4
Feb 01, 1923	2976
Mar 01, 1923	3083.6
Apr 01, 1923	3163
May 01, 1923	3459
Jun 01, 1923	3538
Jul 01, 1923	2982.5
Aug 01, 1923	2429
Sep 01, 1923	1932
Oct 01, 1923	1869
Nov 01, 1923	1787.7
Dec 01, 1923	1722.8
Jan 01, 1924	1357.2
Feb 01, 1924	1405.6
Mar 01, 1924	1583.3
Apr 01, 1924	1555.7
May 01, 1924	1578.7

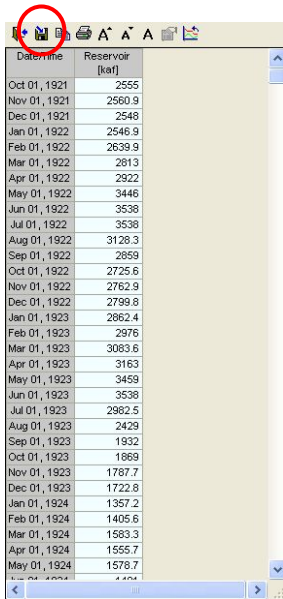
6. Table data can be highlighted and copied for pasting into other applications like Excel



Date/Time	Reservoir [kaf]
Oct 01, 1921	2555
Nov 01, 1921	2560.9
Dec 01, 1921	2548
Jan 01, 1922	2546.9
Feb 01, 1922	2639.9
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Apr 01, 1924	1555.7
May 01, 1924	1578.7

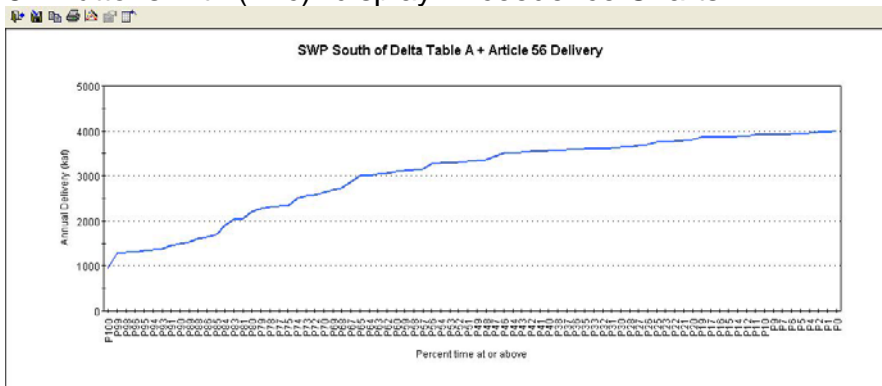
7. Charts and Tables can be exported by saving to Text or JPEG formats.



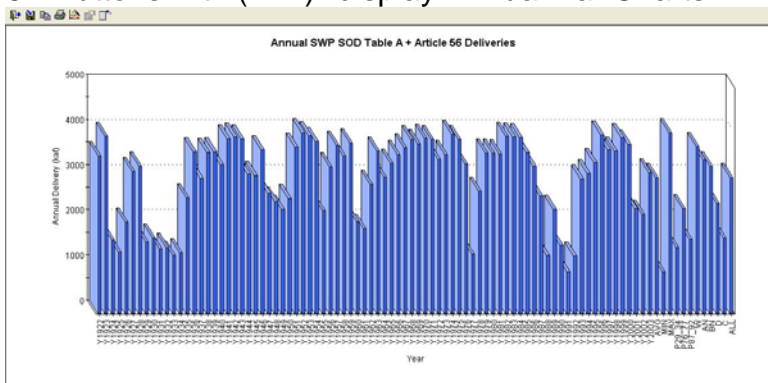


Dateline	Reservoir [kaf]
Oct 01, 1921	2555
Nov 01, 1921	2560.9
Dec 01, 1921	2548
Jan 01, 1922	2546.9
Feb 01, 1922	2639.9
Mar 01, 1922	2813
Apr 01, 1922	2922
May 01, 1922	3446
Jun 01, 1922	3538
Jul 01, 1922	3538
Aug 01, 1922	3128.3
Sep 01, 1922	2859
Oct 01, 1922	2725.6
Nov 01, 1922	2762.9
Dec 01, 1922	2799.8
Jan 01, 1923	2862.4
Feb 01, 1923	2976
Mar 01, 1923	3083.6
Apr 01, 1923	3163
May 01, 1923	3459
Jun 01, 1923	3538
Jul 01, 1923	2982.5
Aug 01, 1923	2429
Sep 01, 1923	1932
Oct 01, 1923	1869
Nov 01, 1923	1787.7
Dec 01, 1923	1722.8
Jan 01, 1924	1357.2
Feb 01, 1924	1405.6
Mar 01, 1924	1583.3
Apr 01, 1924	1555.7
May 01, 1924	1578.7

8. Buttons with (Exc)* display Exceedence Charts



9. Buttons with (Ann)* display Annual Bar Charts



The last bars to the right represent various Annual Values or Average Values such as Average Long-Term, Min, Max, various Dry period averages, and various Water Year Type averages. They can also be viewed in tabular form.

	DelSWP_SOD
Y1998	3606.8
Y1999	3911.1
Y2000	3752.4
Y2001	2328.6
Y2002	2209.8
Y2003	3127.5
AVG	3025
MIN	948.2
MAX	4014.6
P29_34	1484.9
P76_77	2329.1
P87_92	1668.6
VW	3717.1
AN	3420.4
BN	3282.2
D	2454.8
C	1684.9
ALL	3025

10. Navigate to More Results to view Future Facility Output

Results
Central Valley Water Management Screening Model

MAIN MENU

MAIN HOME
CONTROL
SCHEMATIC
RESULTS
Current
Comparative
INSTRUCTIONS

Current Simulation Results

CVP Operations

NOD Storage Trinity Ops Tracy/Jones Ops SOD Deliveries (Bent)
SOD Storage Shasta Ops San Luis Ops SOD Deliveries (Bent)
N vs S Storage Folom Ops

SWP Operations

NOD Storage Oroville Ops SOD Del (Bent)
SOD Storage San Luis Ops SOD Deliveries (Bent)
N vs S Storage Banks Ops

Delta Operations

Inflows Exports CD/SD Flows Delta Safety Banks EC
Outflow Export-Inflow Ratio IF vs TD Exports X2 Jones EC

Delta Balance (Annual) Delta Balance (WYT)

* Delivery exceedance plots and annual delivery plot statistics/year type averages may not display correctly if simulation is less than 62-yr period

More...

Results specific to NODOS, Los Vaqueros, Shasta Enlargement, Isolated Facility, Sac Valley Conjunctive Use, and Fremont Weir are retrieved here.

Results - New Facilities
Central Valley Water Management Screening Model

MAIN MENU

MAIN HOME
CONTROL
SCHEMATIC
RESULTS
INSTRUCTIONS

Current Simulation Results - Future Facilities

Sites Reservoir

NODOS Storage NODOS Fill NODOS Release
NODOS Fill (Location) Red Bluff Resq Wilkins SI Resq
SwP NODOS Oroville CVP NODOS Shasta

Los Vaqueros Reservoir Enlargement

LVR Storage LVR Fill CCWD Divisions
Diversion w/Q CCWD Deliveries Delivery w/Q

Temperance Flat Reservoir (see SJR model)

Shasta Reservoir Enlargement

Shasta Ops Trinity Ops Folom Ops
NOD Storage N vs S Storage
Trinity Export Sac @ Keswick Sac R @ Hood

Isolated Facility

IF vs TD Exports SWP IF vs TD Exports CVP IF vs TD Exports
Delta Inflows X2 CD/SD Flows
Exports Delta Outflow Delta Safety

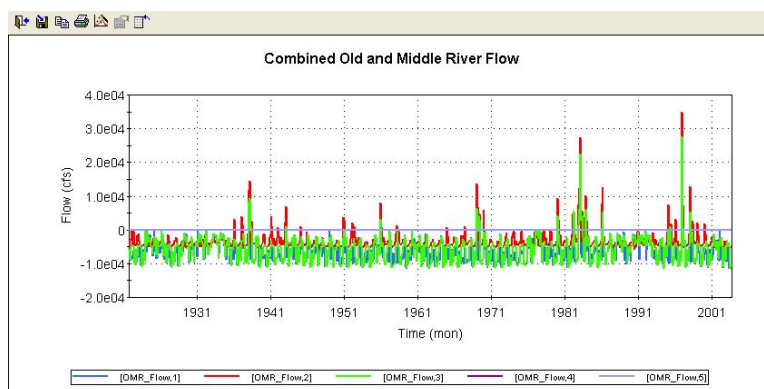
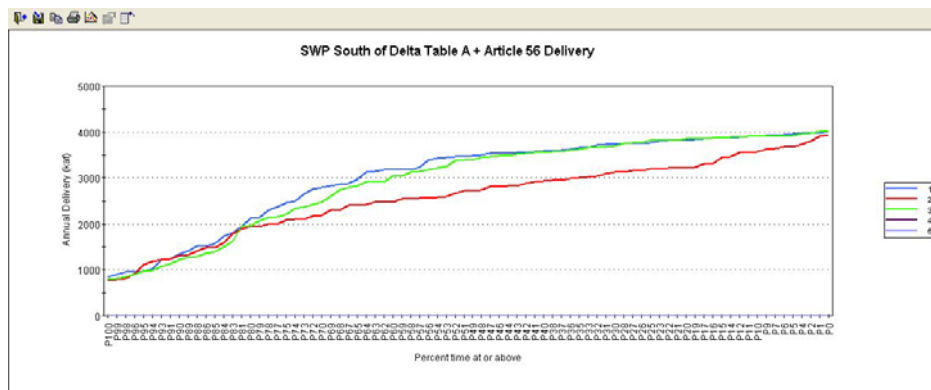
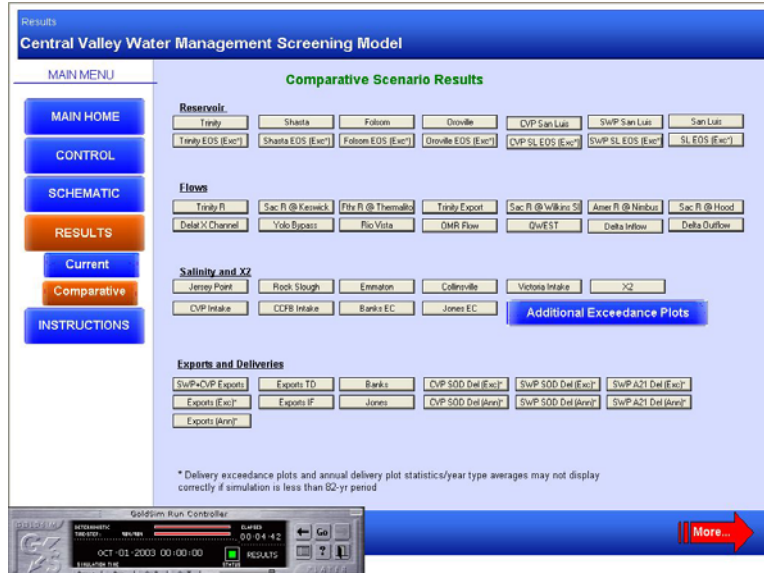
Sacramento Valley Conjunctive Use Program

Inflow Pumping Total CU Recovery Total # of CU Trigg
Sac @ Keswick Sac R @ Wilkins SI Sac R @ Red Bluff
Sac R @ Hood

Fremont Weir Diversion

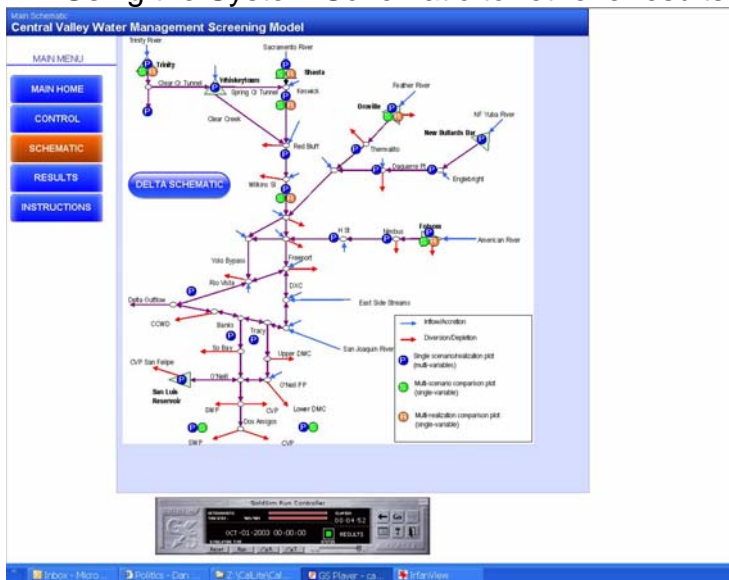
Yakitypass Flow Flow @ Hood Flow @ Rio Vista
Delta Inflows Rock Slough ILC

11. Navigate to Comparative Results to view and compare results from multiple scenarios



Date/Time	[OMR_Flow,1] [cfs]	[OMR_Flow,2] [cfs]	[OMR_Flow,3] [cfs]	[OMR_Flow,4] [cfs]	[OMR_Flow,5] [cfs]
Oct 01, 1921	-5728.2	-4663.1	-5728.2	0	0
Nov 01, 1921	-7223	-4449.6	-7223	0	0
Dec 01, 1921	-9047.5	-3173.1	-9047.5	0	0
Jan 01, 1922	-9077.2	-2894.2	-5000	0	0
Feb 01, 1922	-7519.1	-450.45	-5000	0	0
Mar 01, 1922	-8391.1	-2135.5	-5000	0	0
Apr 01, 1922	-7518.2	-4372.9	-4678	0	0
May 01, 1922	-8186.9	-4724.6	-5000	0	0
Jun 01, 1922	-6288.2	-384.96	-5000	0	0
Jul 01, 1922	-9655.8	-3752.6	-9655.8	0	0
Aug 01, 1922	-10313	-4409.4	-10313	0	0
Sep 01, 1922	-10630	-4727.3	-10630	0	0
Oct 01, 1922	-5656.5	-4478.2	-5656.5	0	0
Nov 01, 1922	-9838.6	-4243.2	-9838.6	0	0
Dec 01, 1922	-7816.9	-1590.1	-7816.9	0	0
Jan 01, 1923	-8097.3	-1235.8	-5000	0	0
Feb 01, 1923	-4223.5	-2299.8	-5000	0	0
Mar 01, 1923	-4547.5	-3292.3	-5000	0	0
Apr 01, 1923	-7616	-4188.3	-4732.8	0	0
May 01, 1923	-6298.2	-4880.8	-3878.1	0	0
Jun 01, 1923	-10375	-4472	-5000	0	0
Jul 01, 1923	-9423.4	-4903	-10806	0	0
Aug 01, 1923	-9971.5	-4416.6	-10320	0	0
Sep 01, 1923	-9297.8	-4577.5	-10393	0	0
Oct 01, 1923	-6124.6	-4440.3	-6485.6	0	0
Nov 01, 1923	-5776.9	-4379.1	-7509.4	0	0
Dec 01, 1923	-9479.2	-3740	-9478.7	0	0
Jan 01, 1924	1.3661	-3551.5	1.3661	0	0
Feb 01, 1924	-6905.9	-3588.7	-5000	0	0
Mar 01, 1924	-444.71	-444.71	-516.42	0	0
Apr 01, 1924	-1586.8	-2508	-966.27	0	0
May 01, 1924	1007.0	2884.1	1007.0	0	0

12. Using the System Schematic to retrieve results

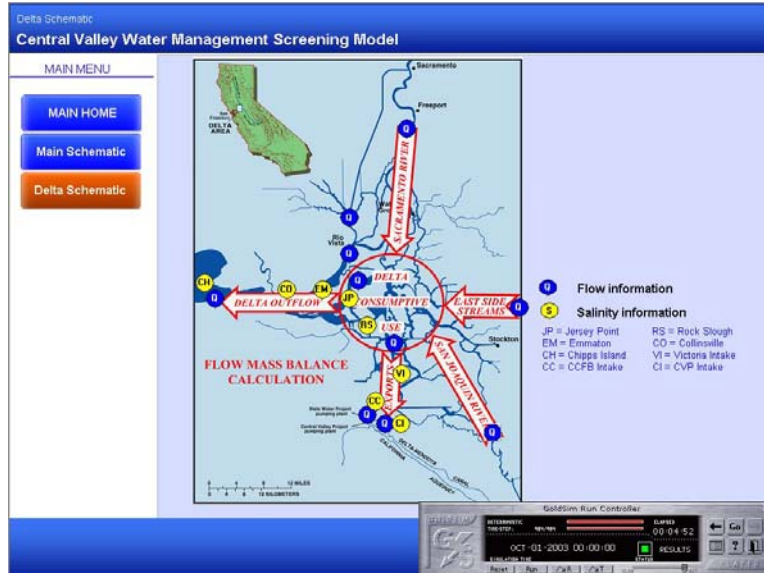



Click  for Single Scenario/Realization Plot with possible multiple variables

Click  for Multi-Scenario Comparison Plot for a single variable

Click  for Multi-Realization Comparison Plot for a single variable

13. Use the Delta Schematic to retrieve results



Click  for Flow Information

Click  for Salinity Information